

### **REMARKS**

The present amendments and remarks are in response to the Office Action of November 3, 2005. Claims 1- 26 are currently pending.

Reconsideration of the application is respectfully requested in view of the following responsive remarks. For the Examiner's convenience and reference, the Applicant's remarks are presented in the order in which the corresponding issues were raised in the Office Action.

In the Office Action, the following rejections were issued:

- (1) Claims 1-21 were rejected under 35 U.S.C. 112, first paragraph as allegedly failing to comply with the written description requirement;
- (2) Claims 1-12 were rejected under 35 U.S.C. 112, second paragraph as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter of the Applicant's invention;
- (3) Claims 1-19 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Application No. 2004/0145088 (hereinafter "Patel"); and
- (5) Claims 20-26 were rejected under 35 U.S.C. 103(a) as being unpatentable over Patel, in view of U.S. Patent No. 6,375,874 (hereinafter "Russell").

#### **Rejections under 35 U.S.C. 112, first paragraph**

The Examiner rejected claims 1-21 under 35 U.S.C. 112, first paragraph as allegedly failing to comply with the written description requirement. In particular, the Examiner stated that the specification as originally filed does not provide basis for the removable materials to be limited to materials other than the reactive build material and the curing agent. Without conceding the correctness of the rejection, the Applicant's have amended claims 1 and 13 (the independent claims) so as to eliminate the previous limitation. The newly amended material is completely supported in the specification as described previously. As such, it is respectfully requested that the rejection be withdrawn.

**Rejections under 35 U.S.C. 112, second paragraph**

The Examiner rejected claims 1-12 under 35 U.S.C. 112, second paragraph as allegedly failing to distinctly claim the subject matter of the invention. Specifically, the Examiner objected to the use of the term “using” with respect to the removable material. The term using has been removed from claim 1 (the independent claim) and the Applicants assert that the claims is in compliance with the requirements of 35 U.S.C. 112, second paragraph. As such, it is respectfully requested that this rejection be withdrawn.

**Rejections under 35 U.S.C. 103(a)**

Before discussing the obviousness rejections herein, it is thought proper to briefly state what is required to sustain such a rejection. The issue under § 103 is whether the PTO has stated a case of *prima facie* obviousness. According to MPEP § 2142, the Examiner has the burden and must establish a case of *prima facie* obviousness by showing the prior art reference, or references combined, teach or suggest all the claim limitation in the instant application. Further, the Examiner has to establish some motivation or suggestion to combine and/or modify the references, where the motivation must arise from the references themselves, or the knowledge generally available to one of ordinary skill in the art. The Applicants respectfully submit that the Examiner has not satisfied the requirement for establishing a case of *prima facie* obviousness in this rejection.

**Rejections over Patel**

Claims 1-19 were rejected under 35 U.S.C. 103(a) as being unpatentable over Patel. Patel discloses a process for forming a three-dimensional article. The three-dimensional article is produced by depositing a layer of a first material over the surface of a build platform within an enclosure (Paragraphs 0061 and 0063). A second material in the form of a liquid reagent is jetted onto the layer of the first material, such that the second material reacts with the first layer to form a cured lamina. These steps are repeated until a three-dimensional article is built-up of cured layers (Paragraph 0009). Patel further discloses, forming a three-dimensional article having complex shapes, (i.e. shapes having overhangs and spaces), by utilizing supports to sustain portions or

overhangs of the complex parts and discarding the supports after the article is formed (Paragraph 0010).

After re-reviewing the disclosure in Patel, it has become clear that Patel actually teaches away from the use of removable support material. In paragraph 10 of the Patel specification, it states that the objects produced by its process are self-supporting, whereas the previously cited art required supplemental material to be used to support the object. The supplemental material would then be removed and discarded. In essence, Patel teaches that one of the principle advantages of its process is that it does not use removable support material.

In contrast, claims 1 and 13 teach a method and a system for free-form fabrication of solid three-dimensional objects comprising, *inter alia*, separately ink-jetting a first ink-jettable composition including a reactive build material and a second ink-jettable composition including a curing agent onto a substrate. Following ink-jetting, a reaction occurs between the reactive build material and the curing agent, thereby resulting in the formation of a solidifying composition. The claims further require that at least a portion of the three-dimensional objects produced be supported by an inkjettable removable material.

Patel fails to teach an essential element of the presently pending claims, namely the use of inkjettable removable support material. As Patel teaches away from the use of removable support material, it cannot render the use of such support inkjettable material as obvious. It is not permissible to modify a reference to arrive at the claimed invention when the modification would be contrary to the teachings of the reference. As such, each and every element of the pending claims is not taught in the cited reference and therefore, no *prima facie* case of obviousness has been presented. In light of the above arguments, it is respectfully requested that the rejection be withdrawn and the claims be allowed.

#### Rejections over Patel in view of Russell

Claims 20-26 were rejected under 35 U.S.C. 103(a) as being unpatentable over Patel in view of Russell. Because claims 20 and 21 depend from claim 13, it is assumed that these claims will be allowable along with claim 13 as discussed above.

Regarding claims 22-26 and the Applicant's prior arguments, namely that the references were not combinable, the Examiner stated "since Russell is cited for the

conventional use of specified colors does not negate the teachings in the Patel et al. reference.” In short, the Examiner has stated that a reference is combinable so long as the references do not contradict each other. The Applicants assert that that is not the standard of combinability. That is merely one reason why two references may not be combinable. In addition, there must be an affirmative suggestion for combination. In *In re Jones* the Federal Circuit court states a standard for the combinability of references:

Before the PTO may combine the disclosures of two or more prior art reference in order to establish *prima facie* obviousness, there must be some suggestion for doing so, found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art....

No citation or support for the combination has been given other than the desire to find two references that collectively contain similar elements to the presently pending claims. The mere fact that two publications do not contain conflicting or contrary teachings (a point which the Applicant does not concede) does not amount to sufficient motivation to combine. There must be some suggestion or motivation for combining the references found in the references themselves. No such suggestion or motivation has been set forth.

In addition, as discussed previously, the claimed product by process differs from the final product disclosed in Russell, which discloses a system that incorporates color inkjet technology in the binder cartridge, thereby providing the capability of printing colors. See column 10, lines 2-4. The three-dimensional part in Russell is built from a powder build material and a curing binder. Russell also teaches that the curing binder can contain a color ink. Further, the powder build material is white or colorless and can absorb the ink colored binder to color the powder. The result is a three-dimensional part which has a color.

In contrast to the three dimensional objects produced by the process in Russell, the objects of claim 22 sets forth “a solid three-dimensional object, comprising multiple layers of a solidifying composition bound to one another, each of said multiple layers formed by contacting a first ink-jettable composition containing a reactive build material with a second ink-jettable composition containing a curing agent, said curing agent being reactive with the reactive build material such that the solidifying composition is formable, said solid three-dimensional object including cyan, magenta, and yellow colorant.”

Applicants submit that even if Patel and Russell were combinable, it would not be obvious under Patel in view of Russell to include cyan, magenta, and yellow colorants to

an ink-jettable composition to form a full color solid three-dimensional object which had been made using colored injected build materials and curing agents as presently claimed. The object formed by the Russell process are fundamentally different, including both chemically and physically e.g. density, strength, malleability, etc., than the object as claimed. Wetting a powder with a curing agent (including a colorant) results in different compositional structure than combining a liquid building composition and a liquid curing composition (at least one of which includes colorant) to form a solid object. The process disclosed in Russell would result in an object more similar to a cement-like object having particulates bound together and likely having residual unbonded powder. Conversely, the present claims set forth an object that does not use a powder bed and would result in a less grainy or particulate structure, with no residual powder.

Further, the process and equipment used to make the two objects would also of necessity need to be markedly different. The Applicant recognizes that in a product by process claim, it is the end product that is determinative of patentability and not the process (see discussion above regarding the differences in the product). However, it is important to note that in order to make the combination set forth by the Examiner to arrive at the claimed product, significant changes to the process would need to be made. Specifically, there would need to be a separate inkjetting apparatus for each of the materials used in the claimed object (3 colors and at least 1 curing agent). As the Russell process does not teach the use of a reactable building material and a curing agent, its process does not include the need for separate inkjetting apparatuses for each. Further, Russell does not teach the use of an injectable support material for use in the process. As the above discussed modifications to the process disclosed in Russell are significant, it would not be obvious to make them and arrive at the presently claimed product. Accordingly, the Applicants assert that the combination of Patel in view of Russell does not render the currently claimed invention obvious. Reconsideration on these grounds is respectfully requested.

### CONCLUSION

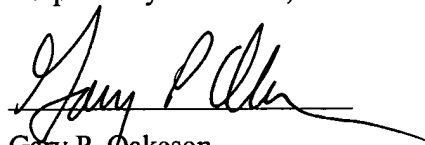
In view of the foregoing, Applicants believe that claims 1-26 present allowable subject matter and allowance is respectfully requested. If any impediment to the

allowance of these claims remains, and such impediment could be resolved during a telephone interview, the Examiner is invited to telephone the assignee's counsel, W. Bradley Haymond at (541) 715-0159, so that such issues may be resolved as expeditiously as possible.

Please charge any additional fees except for Issue Fee or credit any overpayment to Deposit Account No. 08-2025.

Dated this 3<sup>rd</sup> day of February, 2006.

Respectfully submitted,



Gary P. Oakeson  
Attorney for Applicant  
Registration No. 44,266

Of:

THORPE NORTH & WESTERN, LLP  
8180 South 700 East, Suite 200  
Sandy, Utah 84070  
(801) 566-6633

On Behalf Of:

HEWLETT-PACKARD COMPANY  
1000 NE Circle Blvd., m/s 422B  
Corvallis, OR 97330-4239  
(541) 715-0159